

Bellows-sealed Valves

SW, SU Series



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Valves and Fittings

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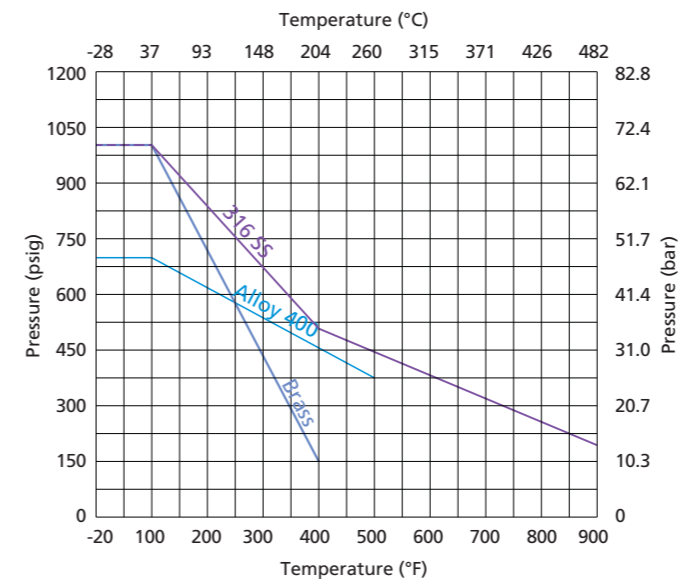
Bellows-sealed Valves SW Series

Features

- ⦿ Maximum working pressure: 1000 psig (68.9 bar)
- ⦿ Working temperature: -20°F to 900°F (-28°C to 482°C)
- ⦿ Variety of connections
- ⦿ Body material: 316 SS, brass and, monel
- ⦿ Hydraulic-formed multilayer bellows for longer cycle life
- ⦿ Galling resistant seat area by nonrotating stem tip
- ⦿ Externally pressurized bellows design for maximum strength
- ⦿ Strictly controlled bellows stroke to improve safety and cycle life
- ⦿ Replaceable bellows and stem assembly
- ⦿ Regulating, conical and spherical stem tips available
- ⦿ Panel and bottom mounting
- ⦿ Every FITOK bellows-sealed valve is factory tested with helium to a maximum leak rate of 4×10^{-9} std cm³/s at the seat, envelope and all seals.



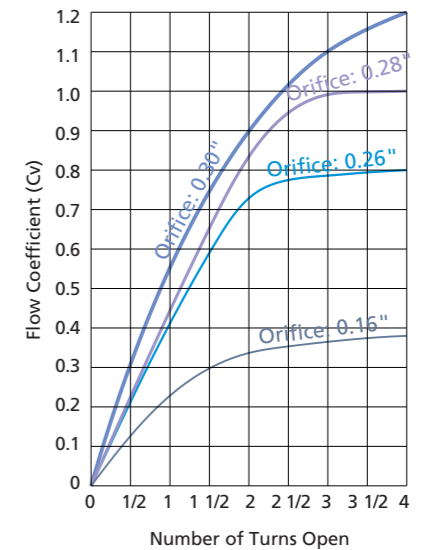
Pressure vs. Temperature



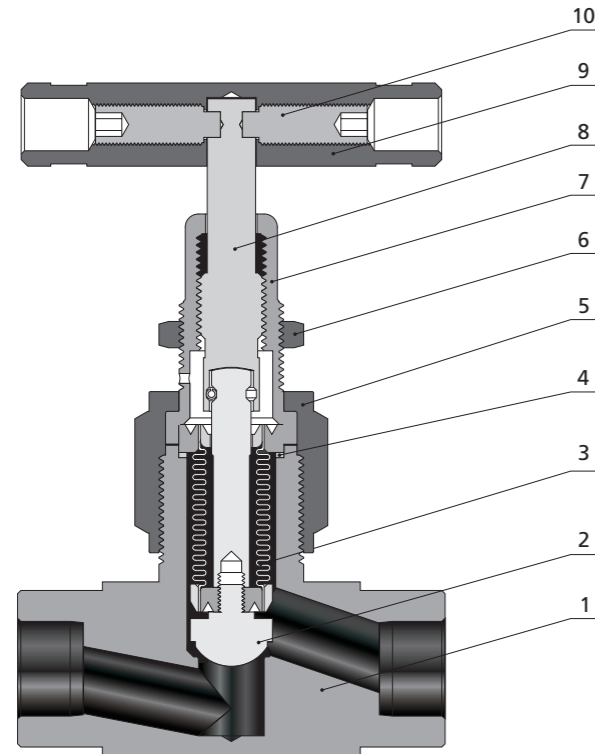
200°F (93°C) max. with PCTFE stem tip (soft tip).

Flow Coefficient vs. Turns Open

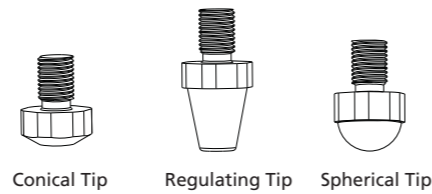
Regulating Stem



Standard Materials of Construction



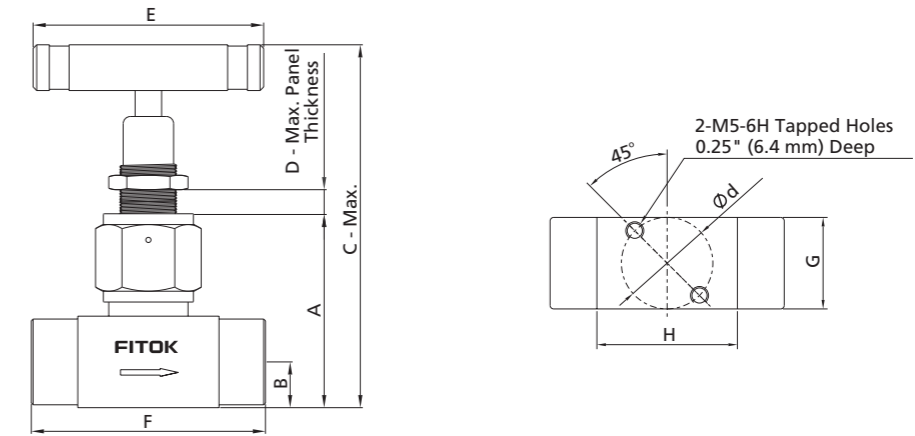
Tip Types



Component	Valve Body Material Grade/ASTM Specification		
	316 SS	Brass	Alloy 400
1 Body	316 SS/A182	Brass/B283	Alloy 400/B564
2 Stem Tip	Chrome-plated		Alloy k-500/AMS4676 (regulating)
	PCTFE/D1430 (conical)		PCTFE/D1430 (conical)
	Weld Stellite (regulating or spherical)		—
3a Bellow	321 SS/A269 (316L SS/A269 optional)		Alloy 400/B165
3b Stem	316 SS/A479 (316L SS optional)		Alloy 400/B164
3c Weld Ring	316 SS/A479 (316L SS optional)		Alloy 400/B164
4 Gasket	Silver-plated 316 SS/A580		Silver-plated Alloy 400/AMS4730
	PTFE-coated 316 SS/A580		PTFE-coated Alloy 400/AMS4730
5 Bonnet Nut	Silver-plated 316 SS/A479	Silver-plated Brass/B16	Silver-plated 316SS/A479
6 Panel Mount Nut	17-4PH Powdered metal	Brass/B16	17-4PH powdered metal
7 Bonnet	316 SS/A479	Brass/B16	316 SS/A479
8 Actuator	416 SS/A582	416 SS/A582	416 SS/A582
9 Handle	Green anodized aluminum 2024-T4/B211 (stainless steel and phenolic optional)		
10 Set Screws	Alloy Steel/ANSI 18.3		
Wetted Lubricant	Fluorinated-based (Spherical Tip)		
Non-wetted Lubricant	Molybdenum disulfide		

Contact the authorized representative or FITOK Group for valves of other materials.

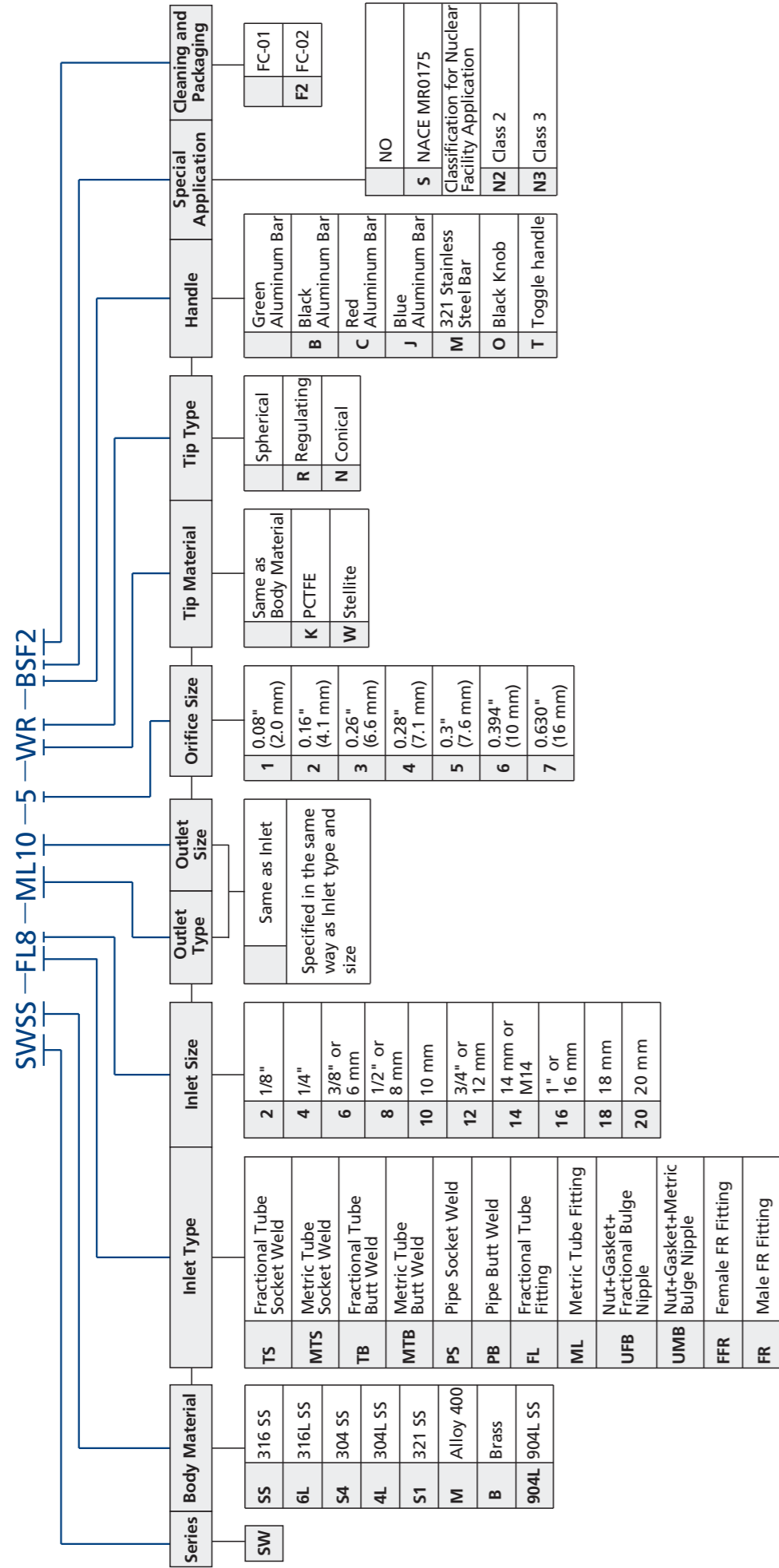
Dimensions



Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Cv	Dimension, in. (mm)								
	Inlet	Outlet			A	B	C	D	E	F	G	H	Ød
SW□□-FL4-2-	1/4" FITOK	1/4" FITOK	0.16 (4.1)	0.36	1.45 (36.8)	0.56 (14.2)	3.64 (92.5)	0.38 (9.7)	1.88 (47.8)	2.46 (62.5)	1.00 (25.4)	1.06 (26.9)	1.00 (25.4)
SW□□-FL6-3-	3/8" FITOK	3/8" FITOK	0.26 (6.6)	0.80	1.57 (39.9)	0.50 (12.7)	4.19 (106.0)	0.38 (9.7)	2.50 (63.5)	3.09 (78.5)	1.13 (28.7)	1.57 (39.9)	1.00 (25.4)
SW□□-FL8-5-	1/2" FITOK	1/2" FITOK	0.30 (7.6)	1.20	1.57 (39.9)	0.50 (12.7)	4.19 (106.0)	0.38 (9.7)	2.50 (63.5)	3.30 (83.8)	1.13 (28.7)	1.57 (39.9)	1.00 (25.4)
SW□□-ML6-2-	6 mm FITOK	6 mm FITOK	0.16 (4.1)	0.36	1.45 (36.8)	0.56 (14.2)	3.64 (92.5)	0.38 (9.7)	1.88 (47.8)	2.46 (62.5)	1.00 (25.4)	1.06 (26.9)	1.00 (25.4)
SW□□-ML10-4-	10 mm FITOK	10 mm FITOK	0.28 (7.1)	1.00	1.57 (39.9)	0.50 (12.7)	4.19 (106.0)	0.38 (9.7)	2.50 (63.5)	3.11 (79.0)	1.13 (28.7)	1.57 (39.9)	1.00 (25.4)
SW□□-ML12-5-	12 mm FITOK	12 mm FITOK	0.30 (7.6)	1.20	1.57 (39.9)	0.50 (12.7)	4.19 (106.0)	0.38 (9.7)	2.50 (63.5)	3.30 (83.8)	1.13 (28.7)	1.57 (39.9)	1.00 (25.4)
SW□□-TS4-2-	1/4" TS	1/4" TS	0.16 (4.1)	0.36	1.45 (36.8)	0.56 (14.2)	3.64 (92.5)	0.38 (9.7)	1.88 (47.8)	1.68 (42.7)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
SW□□-TS6-4-	3/8" TS	3/8" TS	0.28 (7.1)	1.00	1.57 (39.9)	0.50 (12.7)	4.19 (106.0)	0.38 (9.7)	2.50 (63.5)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	1.00 (25.4)
SW□□-TS8-5-	1/2" TS	1/2" TS	0.30 (7.6)	1.20	1.57 (39.9)	0.50 (12.7)	4.19 (106.0)	0.38 (9.7)	2.50 (63.5)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	1.00 (25.4)
SW□□-TB4-2-	1/4" TB	1/4" TB	0.16 (4.1)	0.36	1.45 (36.8)	0.56 (14.2)	3.64 (92.5)	0.38 (9.7)	1.88 (47.8)	1.68 (42.7)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
SW□□-TB6-4-	3/8" TB	3/8" TB	0.28 (7.1)	1.00	1.57 (39.9)	0.50 (12.7)	4.19 (106.0)	0.38 (9.7)	2.50 (63.5)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	1.00 (25.4)
SW□□-TB8-5-	1/2" TB	1/2" TB	0.30 (7.6)	1.20	1.57 (39.9)	0.50 (12.7)	4.19 (106.0)	0.38 (9.7)	2.50 (63.5)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	1.00 (25.4)
SW□□-FFR4-2-	1/4" Female FR	1/4" Female FR	0.16 (4.1)	0.36	1.45 (36.8)	0.56 (14.2)	3.64 (92.5)	0.38 (9.7)	1.88 (47.8)	2.76 (70.1)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
SW□□-FFR8-5-	1/2" Female FR	1/2" Female FR	0.30 (7.6)	1.20	1.57 (39.9)	0.50 (12.7)	4.19 (106.0)	0.38 (9.7)	2.50 (63.5)	3.09 (78.5)	1.13 (28.7)	1.52 (38.6)	1.00 (25.4)
SW□□-FR4-2-	1/4" Male FR	1/4" Male FR	0.16 (4.1)	0.36	1.45 (36.8)	0.44 (11.2)	3.64 (92.5)	0.38 (9.7)	1.88 (47.8)	2.24 (56.9)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
SW□□-FR8-5-	1/2" Male FR	1/2" Male FR	0.30 (7.6)	1.20	1.57 (39.9)	0.44 (11.2)	4.19 (106.0)	0.38 (9.7)	2.50 (63.5)	3.00 (76.2)	1.13 (28.7)	1.52 (38.6)	1.00 (25.4)

1. FITOK means FITOK double ferrule tube fittings, FR means metal gasket seal fittings, TS means fractional tube socket weld, TB means fractional tube butt weld.
2. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.
3. Sizes and types listed are standard. Other sizes and types are available upon request. For special sizes and types, please refer to the ordering information.

Ordering Information



1. Standard thread pitch for metric threads are as follows:

M10 and below: 1 mm
M12 to M20: 1.5 mm

Standard thread pitch should be ignored in the ordering number, others should be specified.

2. Cleaning and Packaging:

FC-01: Standard cleaning and packaging for general industrial procedures.

FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.

Bellows-sealed Valves

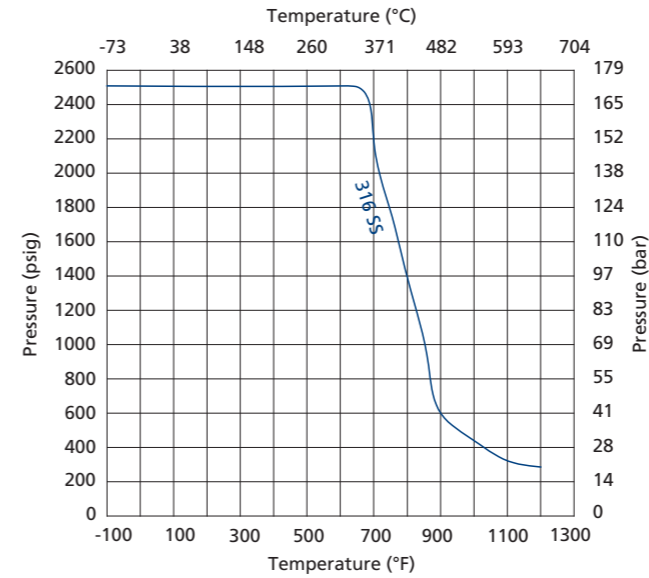
SU Series

Features

- Working pressure up to 2500 psig (172 bar)
- Working temperatures from: -20°F to 1200°F (-28°C to 649°C)
- Wide variety options of end connections
- 316 SS body materials
- Upper packing provides secondary containment system above the bellows
- Hydraulic-formed multilayer bellows enhanced cycle life
- Nonrotating stem tip eliminates galling within the seat area
- Strictly controlled bellows stroke to improve safety and cycle life
- Replaceable bellows and stem assembly
- Regulating, conical, and spherical stem tips available
- Panel, bottom, and side mounting available
- Double lock-pins enable steady and durable fastening of the handle.
- Optional handle colors are available
- Every FITOK bellows-sealed valve is factory tested with helium to a maximum leak rate of 4×10^{-9} std cm³/s at the seat, envelope and all seals

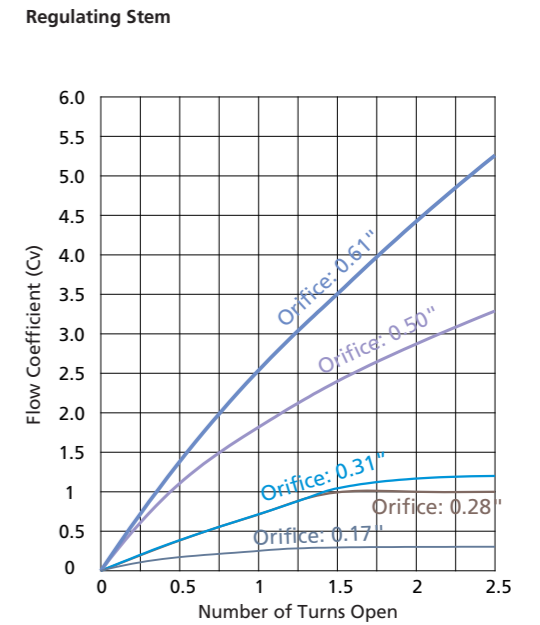


Pressure vs. Temperature

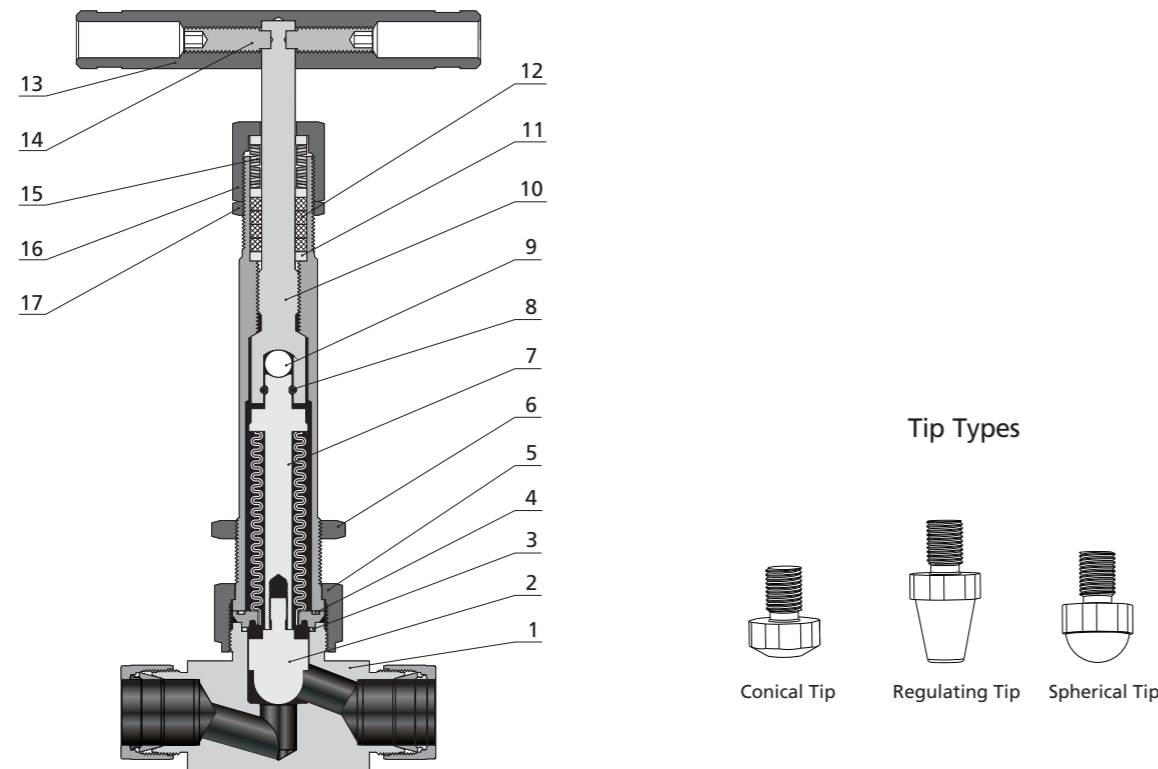


200°F (93°C) max. with PCTFE stem tip (soft tip).

Flow Coefficient vs. Turns Open



Standard Materials of Construction

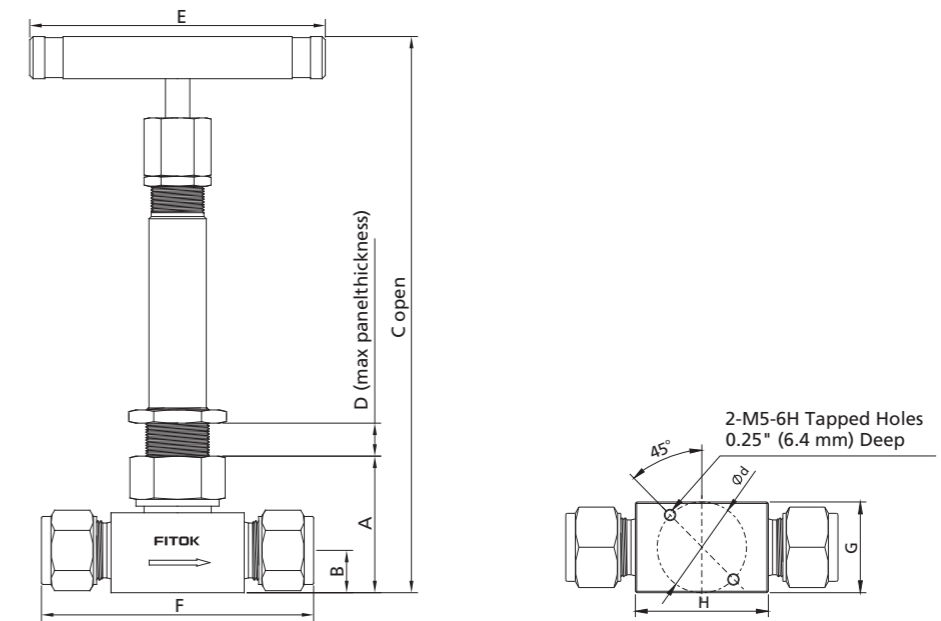


Component		Valve Body Material Grade/ASTM Specification
		316 SS
1	Body	316 SS/A182
2	Stem Tip	Chrome-plated
		PCTFE/D1430 (conical)
		Weld Stellite (regulating or spherical)
3	Gasket	Silver-plated 316 SS/A580
		PTFE-coated 316 SS/A580
4	Bonnet Nut	Silver-plated 316 SS/A479
5	Panel Mount Nut	17-4PH powdered metal
7a	Bellows	321 SS/A269 (316L SS/A269 optional)
7b	Stem	316 SS/A479 (316L SS optional)
7c	Weld Ring	316 SS/A479 (316L SS optional)
8	Pin	416 SS
9	Ball Bearing	440C SS
10	Actuator	416 SS/A582
11	Spacer	316 SS/A240
12	Packing	PTFE or Graphite
13	Handle	Green anodized aluminum 2024-T4/B211 (stainless steel and phenolic optional)
14	Set Screws	Alloy Steel/ANSI 18.3
15	Packing Springs	S17700/A693
16	Packing Nut	316 SS/A276
17	Jam Nut	316 SS/A276

Contact the authorized representative or FITOK Group for valves of other materials.

Dimensions

Orifice: 0.17", 0.26", 0.31"

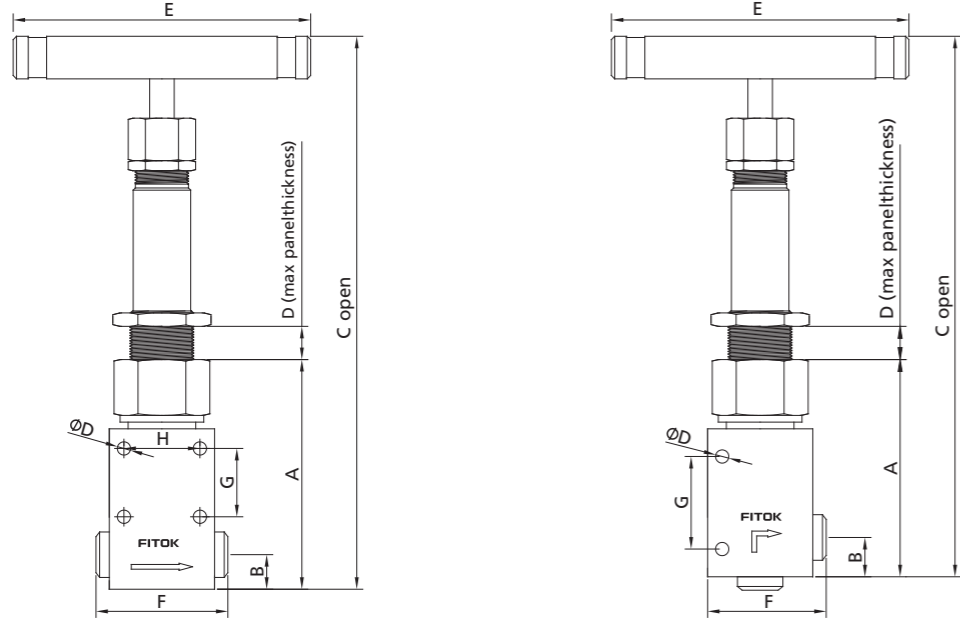


Basic Ordering Number	End Connections		Orifice in. (mm)	Cv	Dimensions, in. (mm)								
	Inlet Size	Outlet Size			A	B	C	D	E	F	G	H	Ød
SU□□-FL4-2-	1/4" FITOK	1/4" FITOK	0.172 (4.37)	0.36	1.49 (37.8)	0.56 (14.2)	6.48 (165)	0.38 (9.7)	2.50 (63.5)	2.46 (62.5)	1.0 (25.4)	1.06 (26.9)	1.0 (25.4)
SU□□-FL6-4-	3/8" FITOK	3/8" FITOK	0.265 (6.73)	0.85	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	3.09 (78.5)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
SU□□-FL8-5-	1/2" FITOK	1/2" FITOK	0.312 (7.92)	1.20	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	3.30 (83.8)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
SU□□-ML6-2-	6 mm FITOK	6 mm FITOK	0.172 (4.37)	0.36	1.49 (37.8)	0.56 (14.2)	6.48 (165)	0.38 (9.7)	2.50 (63.5)	2.46 (62.5)	1.0 (25.4)	1.06 (26.9)	1.0 (25.4)
SU□□-ML10-4-	10 mm FITOK	10 mm FITOK	0.28 (7.1)	1.00	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	3.11 (79.0)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
SU□□-ML12-4-	12 mm FITOK	12 mm FITOK	0.28 (7.1)	1.00	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	3.30 (83.8)	1.13 (28.7)	1.57 (39.9)	1.13 (28.7)
SU□□-TS4-2-	1/4" TS	1/4" TS	0.156 (3.96)	0.36	1.49 (37.8)	0.56 (14.2)	6.48 (165)	0.38 (9.7)	2.50 (63.5)	1.68 (42.7)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)
SU□□-TS6-4-	3/8" TS	3/8" TS	0.28 (7.1)	1.00	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	1.13 (28.7)
SU□□-TS8-5-	1/2" TS	1/2" TS	0.312 (7.92)	1.20	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	1.13 (28.7)
SU□□-TB4-2-	1/4" TB	1/4" TB	0.156 (3.96)	0.36	1.49 (37.8)	0.56 (14.2)	6.48 (165)	0.38 (9.7)	2.50 (63.5)	1.68 (42.7)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)
SU□□-TB6-4-	3/8" TB	3/8" TB	0.28 (7.1)	1.00	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	1.13 (28.7)
SU□□-TB8-5-	1/2" TB	1/2" TB	0.312 (7.92)	1.20	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	1.13 (28.7)
SU□□-FFR4-2-	1/4" Female FR	1/4" Female FR	0.156 (3.96)	0.36	1.49 (37.8)	0.56 (14.2)	6.48 (165)	0.38 (9.7)	2.50 (63.5)	2.76 (70.1)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)
SU□□-FFR8-5-	1/2" Female FR	1/2" Female FR	0.3 (7.6)	1.20	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	2.98 (75.7)	1.13 (28.7)	1.52 (38.6)	1.13 (28.7)
SU□□-FR4-2-	1/4" Male FR	1/4" Male FR	0.156 (3.96)	0.36	1.49 (37.8)	0.56 (14.2)	6.48 (165)	0.38 (9.7)	2.50 (63.5)	2.24 (56.9)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)
SU□□-FR8-5-	1/2" Male FR	1/2" Male FR	0.3 (7.6)	1.20	1.61 (40.9)	0.50 (12.7)	6.59 (167)	0.38 (9.7)	2.50 (63.5)	3.00 (76.2)	1.13 (28.7)	1.52 (38.6)	1.13 (28.7)

1. FITOK means FITOK double ferrule tube fittings, FO means O-ring seal fittings, FR means metal gasket seal fittings. They are interchangeable with Swagelok/Parker products.
2. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.
3. The sizes and types listed are standard. Other sizes and types are available upon request, refer to ordering information.

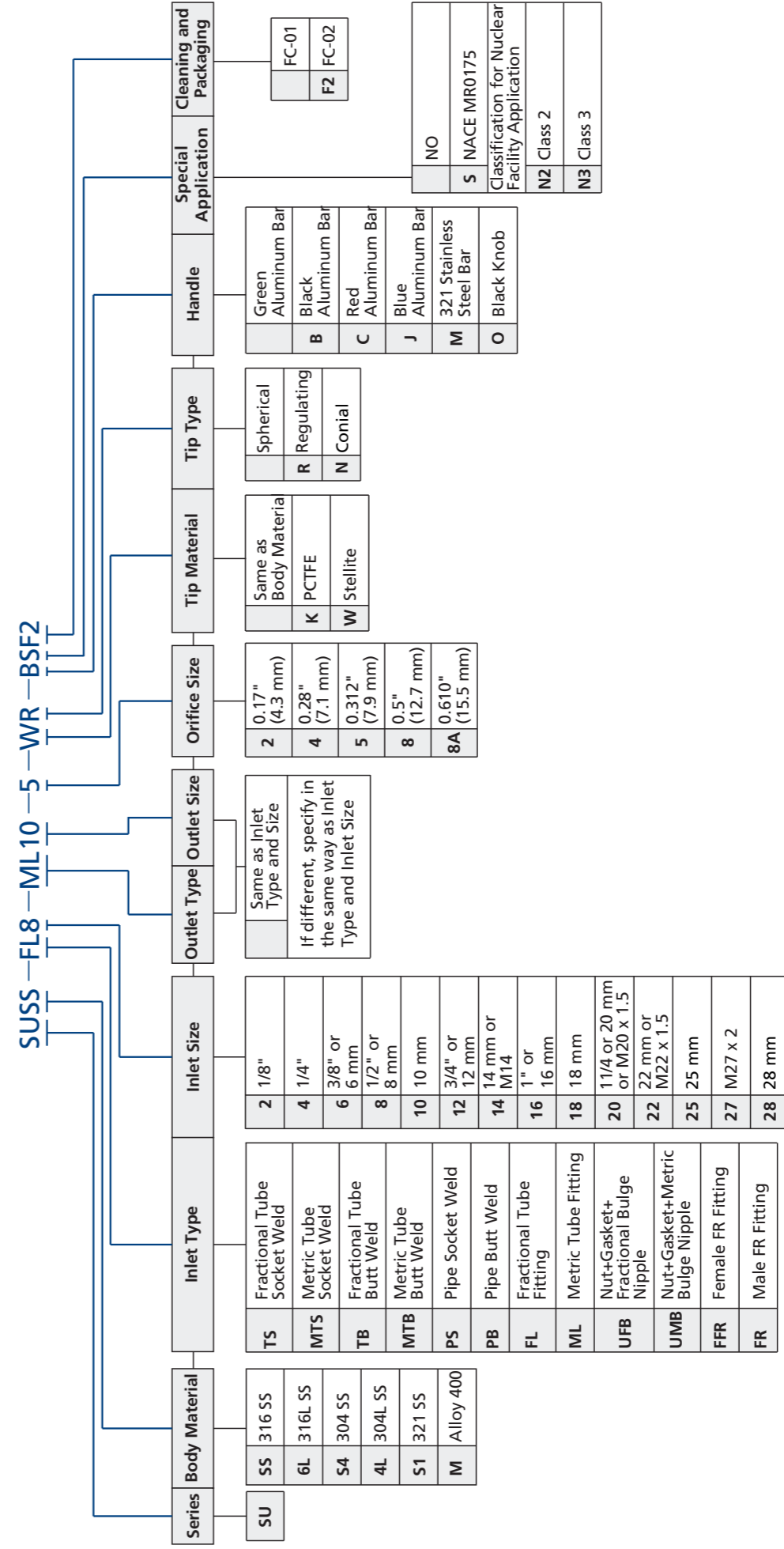
Dimensions

Orifice: 0.50", 0.61"



Basic Ordering Number	End Connections		Orifice in. (mm)	CV	Dimensions, in. (mm)								
	Inlet Size	Outlet Size			A	B	C	D	E	F	G	H	Ød
SU□□-TS12-8-	3/4" TS	3/4" TS	0.50 (12.7)	3.10	4.88 (124)	1.00 (25.4)	11.6 (295)	0.59 (14.9)	4.00 (102)	2.44 (62.0)	1.25 (31.8)	1.46 (37.0)	0.27 (6.9)
SU□□-TB12-8-	3/4" TB	3/4" TB	0.50 (12.7)	3.10	4.88 (124)	1.00 (25.4)	11.6 (295)	0.59 (14.9)	4.00 (102)	2.44 (62.0)	1.25 (31.8)	1.46 (37.0)	0.27 (6.9)
SU□□-TS12-8A-	3/4" TS	3/4" TS	0.61 (15.5)	5.30	4.88 (124)	1.44 (36.6)	11.6 (295)	0.59 (14.9)	4.00 (102)	2.49 (63.2)	1.60 (40.6)	—	0.26 (6.6)
SU□□-TB12-8A-	3/4" TB	3/4" TB	0.61 (15.5)	5.30	4.88 (124)	1.44 (36.6)	11.6 (295)	0.59 (14.9)	4.00 (102)	2.49 (63.2)	1.60 (40.6)	—	0.26 (6.6)
SU□□-TB16-8A-	1" TB	1" TB	0.61 (15.5)	5.30	4.88 (124)	1.44 (36.6)	11.6 (295)	0.59 (14.9)	4.00 (102)	2.49 (63.2)	1.60 (40.6)	—	0.26 (6.6)

Ordering Information



1. Standard thread pitch for metric threads are as follows:

- M10 and below: 1 mm
- M12 to M20: 1.5 mm

Standard thread pitch should be ignored in the ordering number, others should be specified.

2. Cleaning and Packaging:

FC-01: Standard cleaning and packaging for general industrial procedures.

FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.